



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
OREGON OPERATIONS OFFICE
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January 15, 2008

Mr. Jim McKenna
Port of Portland & Co-Chairman, Lower Willamette Group
121 NW Everett
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Mr. Robert Wyatt
Northwest Natural & Co-Chairman, Lower Willamette Group
220 Northwest Second Avenue
Portland, Oregon 97209

Re: Portland Harbor Superfund Site; Administrative Order on Consent for Remedial Investigation and Feasibility Study; Docket No. CERCLA-10-2001-0240.
Comprehensive Round 2 Site Characterization and Data Gaps Analysis Report

Dear Messrs. Wyatt and McKenna:

The Comprehensive Round 2 Site Characterization and Data Gaps Report (Round 2 Report) represents a significant milestone for the Portland Harbor Remedial Investigation and Feasibility Study (RI/FS). The purpose of this document was to summarize the site characterization information collected to date and to identify the data necessary to complete the characterization phase of the Portland Harbor RI/FS. EPA believes that the Round 2 Report has presented a comprehensive picture of the site as a whole and advanced our understanding of the nature and extent of contamination and associated risks to human health and the environment at the Portland Harbor Site.

As we have discussed, EPA does not expect to provide formal approval or require that the Round 2 Report be revised and re-submitted. Rather, EPA is providing the attached comments on the Round 2 Report to guide the development of approvable RI and Baseline Risk Assessment (BRA) Reports. We believe that most of the key issues identified in these detailed comments have been identified in EPA's previous comments and discussions with LWG representatives.

Timing of Comments:

EPA has focused its review and provided comments in stages because of the comprehensive nature of the Round 2 Report and to ensure that the Round 3 data collection efforts to support the RI were completed in early 2008. The review elements are summarized below.

- April 10, 2007: EPA provided preliminary comments on Round 2 Report. The purpose of the preliminary comments was to focus on the finalization of Round 3 data gaps and to identify elements of the Round 2 Report that are critical to the development of the draft RI Report and the baseline ecological and human health risk assessments.
- June 8, 2007: EPA provided comments on the data gaps identification elements of the Round 2 Report. These comments and the Round 3B field sampling plans developed by the LWG served as the basis for determining the data necessary to complete the characterization phase of the Portland Harbor RI/FS. EPA and the LWG worked well together to resolve field sampling plan issues and most of the field work has been completed.

In order to facilitate the development of the draft remedial investigation (RI) and baseline risk assessment (BRA) reports, EPA is providing the attached detailed comments on Sections 1 through 9 and Appendices A, B, C, D, F and G of the Round 2 Report except as noted below. EPA expects to provide comments on the additional sections listed below according to the following schedule:

- Screening Level Risk Assessment: EPA is developing a stand alone screening level risk assessment (SLERA). EPA expects that the SLERA will be used to identify chemicals to be carried forward into the baseline risk assessment. The SLERA may be refined based on the results of the Round 3 data collection effort. EPA expects to provide the SLERA to the LWG on or about January 18, 2008.
- Problem Formulation for the Ecological Risk Assessment: EPA is developing a draft Problem Formulation for the Ecological Risk Assessment. This will serve as the basis for a final problem formulation to be developed by the LWG and a mechanism for reaching agreement how to perform the baseline ecological risk assessment (BERA). EPA expects to provide the Problem Formulation for the Ecological Risk Assessment to the LWG on or about January 18, 2008.
- Appendix E – Food Web Model and Biota-Sediment Accumulation Factor (BSAF) Development: Appendix E describes the methods that will be used to establish relationships between biota tissue and sediment concentrations. Due to the iterative and complex technical nature of this analysis and because these tools will be used to develop cleanup levels for Portland Harbor site and not to evaluate risks to human health or the environment, EPA expects to provide to comments on Appendix E on or about March 1, 2008.
- Appendix G – Toxicity Reference Values for the Baseline Ecological Risk Assessment: EPA and the LWG have reached general agreement on the toxicity reference values (TRVs) used in the screening level risk assessment. However, EPA and the LWG are not in agreement on the TRVs to be used in the baseline ecological risk assessment (BERA). EPA believes it is in the best interest of the project for EPA to provide direction to the LWG regarding which TRVs to use in the BERA. Developing direction on TRVs for the

BERA will require a detailed review of the TRVs and supporting information presented in the 2004 TRV Technical Memorandum, the 2006 Preliminary Risk Evaluation, and the Comprehensive Round 2 Report and other supporting literature. As a result, EPA expects to provide comments on the BERA TRVs on or about February 15, 2008.

- Floating Percentile Model: EPA's problem formulation for ecological risk assessment will include a weight of evidence approach for assessing the floating percentile and logistic regression methods for predicting benthic toxicity. EPA believes that both predictive models are useful lines of evidence for evaluating risks to benthic invertebrates. As a result, EPA's problem formulation will describe how to evaluate these two predictive models in light of the other lines of evidence for assessing risks to benthic invertebrates. The details behind the floating percentile model (FPM) were presented in earlier technical documents and are not presented in the Round 2 Report. EPA will need to evaluate these details in order to determine whether the FPM can be used as proposed by the LWG. EPA expects to complete this evaluation after the results of the Round 3 data collection activities are available.
- Section 10 – Preliminary Identification of iAOPCs and Associated Appendix H: The identification of initial preliminary remediation goals (iPRGs) and initial areas of potential concern (iAOPCs) are fundamentally tasks that should be addressed in the feasibility study (FS). EPA expects to provide comments on Section 10 and Appendix H on or about March 1, 2008.
- Section 11 – Conceptual Site Model and Associated Appendices I and J: Because Section 11 builds off the iPRGs and iAOPCs presented in Section 10, EPA expects to provide comments on Section 11 on or about March 1, 2008.
- General Guidance on the Feasibility Study: The Round 2 Report includes many elements of a feasibility study such as the development of iPRGs and the identification of iAOPCs. In the interest of the overall project schedule, EPA will provide guidance to the LWG on the feasibility study on or before February 15, 2008.

Key Issues:

EPA's review of the Round 2 Report has identified a number of key issues that must be resolved prior to delivery of the draft RI and baseline risk assessment reports. These issues are summarized below:

- The human health and ecological risk assessments should be presented in an unbiased manner. Risk management decisions should not be factored into the risk assessment process.
- EPA does not believe that the risk evaluation used to develop iPRGs and iAOPCs is appropriately conservative. For example, sediment samples must be screened against sediment quality guidelines (SQGs) and surface water samples must be screened against site specific fish consumption criteria based on a 175 g/day fish consumption rate. In

addition, iPRGs were developed for only a limited number of metals and were not developed for certain key exposure pathways (e.g., fish consumption). Additional comments on the development of iPRGs will be presented in our comments on Section 10.

- The upstream fish tissue data should be used for informational purposes. EPA will determine background concentrations for sediment and water only.
- The human health risk assessment should include a residential and industrial surface water drinking water scenario. Surface water chemicals that screen in based on a comparison to MCLs and Region 6 screening levels should be evaluated. TZW chemicals that screen in based on a comparison to MCLs and Region 6 screening levels should be evaluated as a source of contamination to surface water with respect to the drinking water exposure scenario.
- The human health risk assessment should evaluate clam and crayfish consumption. EPA acknowledges that sufficient clam tissue to support the exposure scenario must be available. As a result, EPA recommends evaluating clam consumption on a river mile by river mile basis.
- EPA does not agree with the 5000 fold dilution factor applied to TZW when evaluating the shellfish consumption exposure scenario. TZW data should be evaluated as a line of evidence in the baseline human health risk assessment. Shellfish tissue should be used as the primary line of evidence. Areas or chemicals for which shellfish data are not available should rely on the TZW results and assess the lack of tissue data in the uncertainty section of the HHRA.
- TZW should be used as a line of evidence in the ecological risk assessment. AWQC and other water TRVs should be used to evaluate the risk associated with exposure to TZW.
- The screening level risk assessment for the ecological risk assessment did not consider sediment quality guidelines (SQGs). EPA will be submitting the SLERA in the near future.
- Exposure point concentrations must be developed on a scale that is appropriated for the receptors of concern. It is inappropriate to consider a side-wide exposure area for evaluating risks to the benthic community.
- Several comments provide recommendations regarding the presentation of data and analysis in the RI and BRA reports. Examples include the following:
 - Mapping site data relative to risk thresholds. In some cases, risk thresholds may be too conservative to provide meaningful information (i.e., the majority of the sediment, tissue or water data exceed the threshold), and order of magnitude multipliers of the risk thresholds should be used. This will greatly improve the presentation of site data by putting into a risk based context;
 - Separating actual data sections and tables from calculated, extrapolated, and

- interpreted results;
- Providing histograms or scatter plots that include risk threshold levels and, where EPA is in agreement, background levels; and
- Highlighting trends and patterns in tables, figures and graphs rather than subjective text.

Directive Nature of Comments:

EPA has provided its comments on the Round 2 Report in the attached comment table. To the extent possible given the complex nature of the Comprehensive Round 2 Report, EPA has provided specific direction regarding the development of the draft RI and BRA Reports. EPA believes that to keep the project on schedule, we must minimize the time it takes to resolve the comments. As a result, EPA has categorized the comments according to the following criteria:

- Category 1: These are general comments or notes. In many cases, no action to address the comment is necessary.
- Category 2: These are comments on data presentation, clarifying statements and incorporation of new or additional information. In some cases, further discussion on the best way to present information will be necessary. EPA recommends reaching agreement on the data presentation process prior to development of the draft RI and BRA Reports.
- Category 3: These are comments on subjective or judgmental language, clarification and where additional information is required. Language changes are generally required. EPA has generally recommended removing this type of language.
- Category 4: These comments represent EPA direction on the data analysis. EPA expects that these changes will be incorporated. The majority of these comments relate to the human health and ecological risk assessments.
- Category 5: Additional direction will be forthcoming. For example, EPA will be providing a problem formulation for the ecological risk assessment.

Next Steps:

EPA and the LWG should discuss the specific recommendations in our comments and other approaches to improve the RI and BRA documents and associated data presentations. We believe there may be some merit in using elements of the “streamlined” approach that was presented at the recent “Optimizing Decision-Making and Remediation at Complex Sediment Sites” conference. This will allow us to minimize subjective or judgmental text, facilitate the development and review of the RI and BRA Reports and rely to the extent possible on tables, figures, graphs and maps to present the site information.

As previously noted, EPA does not expect the Round 2 Report to be revised. The attached comments should be incorporated into the draft RI and BRA reports. EPA expects that our comments on Sections 1 through 7 to be readily incorporated into the draft RI report as appropriate, and that minimal time for discussion and resolution of comments will be required. While a few comments on the human health risk assessment will require further discussion, the

topic that we expect the most discussion on is our comments on the ecological risk assessment. EPA believes that the EPA developed problem formulation will serve as good vehicle for reaching agreement on how to perform the BERA.

EPA appreciates the LWG's efforts to finalize the Round 3 sampling plans and collect the necessary data to fill the RI data gaps in line with our projected schedule. We are looking forward to working with the LWG to resolve these comments, expedite the review and incorporation of the Round 3 data results, and proceed with preparation of the draft RI and Risk Assessment Reports. If you have any questions, please contact Chip Humphrey at (503) 326-2678 or Eric Blischke (503) 326-4006. All legal inquiries should be directed to Lori Cora at (206) 553-1115.

Sincerely,

Chip Humphrey
Eric Blischke
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